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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/471,857	12/23/1999	QIZHENG GU	NC29176	8032

7590 01/29/2003

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EXAMINER

WILLIAMS, LAWRENCE B

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 01/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/471,857

Applicant(s)

GU, QIZHENG

Examiner

Lawrence B Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 11-19 is/are rejected.
- 7) ☒ Claim(s) 8-10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 3, 5, 6, 7, 11, 12, 13, 14, 15, 16, 18 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Yerbury et al. (US Patent 5, 063, 560).

(1) With regard to claim 1, Yerbury et al. discloses a method for receiving a signal, said method comprising the steps of receiving an RF signal, said RF signal comprising a plurality of information channel signals, wherein each of said plurality of information channel signals are transmitted in one of a plurality of transmission bands, and each of said plurality of information channel signals is carried on one of a plurality of carrier frequencies (col. 8, lines 56-68; col. 9, lines 1-18); down-converting said RF signal to form an intermediate signal, wherein said intermediate signal comprises down-converted versions of each of said plurality of information channel signals, and said down-converted versions of each of said plurality of information channel signals are within a common frequency spectrum (col. 7, lines 15-65); and decoding said

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intermediate signal to extract data from said down converted versions of each of said plurality of information channel signals (col. 11, lines 24-37).

(2) With regard to claim 2, Yerbury et al. also discloses wherein said plurality of information channel signals each comprises different code division multiple access data (col. 1, lines 26-30).

(3) With regard to claim 3, Yerbury et al. also discloses wherein each of said plurality of information channel signals comprises data spread using at least one spreading code (col. 6, lines 30-35).

(4) With regard to claim 5, Yerbury et al. also discloses, wherein said step of down-converting comprises down-converting each one of said plurality of carrier frequencies by a plurality of oscillator frequencies (col. 7, lines 28-30).

(5) With regard to claim 6, Yerbury et al. also discloses wherein the frequency spacing between each adjacent pair of said plurality of carrier frequencies and between each adjacent pair of said oscillator frequencies is substantially the same (col. 7, lines 30-33).

(6) With regard to claim 7, Yerbury et al. also discloses wherein said common frequency spectrum comprises a first common frequency spectrum and the step of decoding said intermediate signal comprises the step of forming a base band signal by down converting said first common frequency spectrum to a second common frequency spectrum, said second common frequency spectrum lower in frequency than said first common frequency spectrum (col. 5, lines 1-3; col. 7, lines 45-50).

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(7) With regard to claim 11, Yerbury et al. also discloses wherein the step of receiving an RF signal comprises receiving an RF signal from a cellular radio base station (col. 2, lines 37-39).

(8) With regard to claim 12, Yerbury et al. also discloses the method of claim 1, further comprising the step of filtering said intermediate signal to attenuate at least one signal outside the common frequency spectrum before performing said step of down-converting (col. 7, lines 50-52).

(9) With regard to claim 13, Yerbury et al. also discloses in Fig. 4, a mobile radio telephone unit comprising an antenna (35) configured to receive an RF signal, said RF signal comprising a plurality of information channel signals, wherein each of said plurality of information channel signals is transmitted in one of a plurality of transmission bands, and each of said plurality of information channel signals is carried on one of a plurality of carrier frequencies (col. 8, lines 56-68; col. 9, lines 1-18); a down-converter operatively coupled to the antenna and configured to down-convert said RF signal to form an intermediate signal, wherein said intermediate signal comprises down-converted versions of each of said plurality of information channel signals, and said down-converted versions of each of said plurality of information channel signals are within a common frequency spectrum (col. 7, lines 15-65); a decoder operatively coupled to the down-converter and configured to decode said intermediate signal to extract data from said down converted versions of each of said plurality of information channel signals (col. 11, lines 24-37).

(10) With regard to claim 14, Yerbury et al. also discloses wherein each of said plurality of information channel signals comprises different code division multiple access data (col. Col.

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1, lines, 26-30; col. 3, lines 47-52), and each of said information channel signals comprises data spread using at least one spreading code (col. 6, lines 30-35).

(11) With respect to claim 15, Yerbury et al. also discloses wherein said down-converter is configured to down-convert each of said plurality of carrier frequencies by a plurality of carrier frequencies having a lower frequency (col. 7, lines 23-30).

(12) With regard to claim 16, Yerbury et al. also discloses wherein said down-converter comprises an oscillator for generating an oscillator signal comprising a plurality of oscillator frequencies, the frequency spacing between each adjacent pair of said plurality of a carrier frequencies and between each adjacent pair of said plurality of oscillator frequencies being substantially the same (col. 7, lines 28-33).

(13) With regard to claim 18, Yerbury et al. also discloses in Fig. 4, signal reception apparatus comprising a down-converter configured to form an intermediate signal by down-converting an RF signal including a plurality of transmission bands to at least one intermediate band, said at least one intermediate band s including at least one channel, wherein said down-converter downs converts by multiplying said RF signal by at least two frequencies (col. 7, lines 16-44); and decoding circuitry coupled to the down-converter and configured to extract data from each at least one intermediate band, wherein the extracted data comprises data from each at least one channel included in each at least one intermediate band (col. 7, lines 45-65; col. 10, lines 8-30).

(13) With regard to claim 19, Yerbury et al. also discloses wherein each of the at least one channels of each at least one intermediate band comprises a different spread spectrum signal, and wherein the decoding circuitry comprises a spread spectrum decoder to extract data from the

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intermediate band using a spreading code associated with each at least one channel of each at least one intermediate band (col. 12, lines 34-55).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yerbury et al. (US Patent 5, 063,560) as applied to claims 1 and 15, respectively above, and further in view of Watanabe et al. (EP 0 851 601 A2).

(1) With regard to claim 4, as note above, Yerbury et al. discloses all limitations of claim

3. However, Yerbury et al. does not disclose wherein each of said plurality of information channel signals is spread by different spreading codes. However, Watanabe et al. discloses in Fig. 1, a multi code radio reception apparatus wherein each of said plurality of information channel signals is spread by different spreading codes (col. 4, lines 50-55).

One skilled in the art would have clearly recognized that wherein each of said plurality of information channel signals is spread by different spreading codes is also a well-known technique introduced in many references. Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Watanabe et al. to the invention of Yerbury et al. since this method is inherent to a CDMA system.

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(2) With regard to claim 17, claim 17 inherits all limitations of claim 15. As noted above, Yerbury et al. discloses all limitations of claim 15. Yerbury et al. does not however disclose wherein the decoder comprises a CDMA decoder configured to extract data from said down-converted version of each of said plurality of information channel signals using a different despreading code (col. 5, lines 24-45).

***Allowable Subject Matter***

6. Claim 20 is allowed.

7. Claims 8, 9 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 703-305-6969. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Lawrence B. Williams

lbw

January 15, 2003



STEPHEN CHIN  
SUPERVISORY PATENT EXAMINER  
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